

## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of claims:**

1-21 (Canceled)

22. (Previously presented) A method of transmitting multiple frames, each frame having a header field and a data field, to deep packet processing functions in a given sequence, performing the deep packet processing on the data field of each frame and forwarding the processed frames to their destination in the same given sequence, comprising the steps of:

- a) receiving frames into an input buffer that is incorporated into a Data Moving Unit, said buffer having a buffer capacity of at least twice the size of the largest frame size to be processed;
- b) using a Frame Header Processing Unit to determine from the header field the type of deep packet processing operation to be performed on the data field of each frame;
- c) assigning each frame to one of a plurality of processing core engines, based upon the processing operation to be conducted on the data contained in the frame, each frame being stored in a memory associated with a core engine until the engine is free to perform the processing operation on the data field of the frame;
- d) performing at least one deep-packet processing operation on the data field in each frame;
- e) collecting the processed frames in an output buffer that is incorporated into a Data Moving Unit, said buffer having a buffer capacity of at least twice the size of the largest frame size to be processed; and

- f) sequencing and forwarding processed frames to their destination in the same order as said frames are received into the input buffer.

23. (Canceled)

24. (Previously Presented) The method according to claim 22 including using more than one core engine for a given deep packet processing operation, said arbitrator selecting which of the more than one core engines is to be used for said processing of a given frame.

25. (Previously Presented) The method according to claim 24 wherein the given frame is assigned from one deep packet operation to another by the arbitrator.

26. (Previously Presented) The method according to claim 25 wherein separate paths are provided between core engines, and the given frame is transferred directly from the memory of one core engine into the memory of a second core engine.